

RIDLON (J.)

CONTRIBUTIONS

TO

ORTHOPÆDIC SURGERY

BY

JOHN RIDLON, A.M., M.D.

*Attending Orthopaedic Surgeon to St. Luke's Hospital; Attending Surgeon, First Orthopaedic Division, Department for Out-Door Poor at Bellevue Hospital; Late Instructor in Orthopaedic Surgery, Medical Department of the University of the City of New York; Late Senior Assistant Surgeon and Out-Door Visiting Surgeon of the New York Orthopaedic Dispensary and Hospital, etc.*



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The Knickerbocker Press

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## PREFACE.

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When these articles were originally published, I did not have reprints made for distribution, as it is the custom for many to do. I now for the first time am able to comply with the request for one or the other of them, and takes this opportunity of sending copies to all that I think may be interested in the subject-matter herein contained.

JOHN RIDLON.

337 West 57th Street, New York.



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## A SPLINT FOR THE TREATMENT OF DEFORMITY AT THE KNEE-JOINT DUE TO THE REFLEX MUSCULAR SPASM OF CHRONIC OSTEITIS.<sup>1</sup>

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FIG. 1 is from a photograph showing the splint and the key. The splint consists of two bars of annealed steel joined in an antero-posterior hinge, the action of which is regulated by a section of a toothed wheel and an endless screw worked by a key, and two pieces of sheet steel lined with flannel and chamois, and riveted to the bars.

To fit and apply the splint, mould the pieces of sheet steel, one to the anterior surface of the thigh, and the other to the anterior surface of the leg. With the aid of a pair of monkey-wrenches bend the bars so that they will lie along the anterior surface of the thigh and leg, and arch over the knee from a point an inch or an inch and a half above the patella to the tuberosity of the tibia, about an inch away from the surface of the knee, and with the hinge directly anterior to the nominal centre of motion of the knee-joint in the lower end of the femur; then rivet on the pieces of sheet steel and sew on the lining. Half a dozen of holes should have been made in each bar, and numerous small ones about the borders of

<sup>1</sup> Published in the *Medical Record*, January 5, 1884.

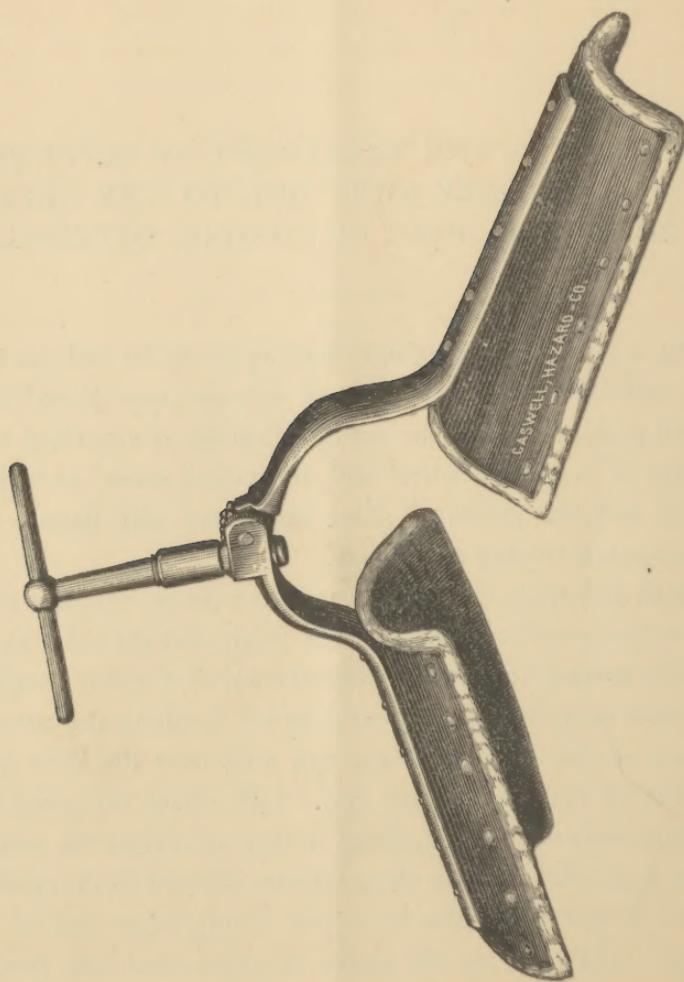


FIG. I.

the sheet-steel pieces by the instrument maker ; but the holes in the sheet-steel pieces, through which the rivets pass, must be made by the surgeon at the time the brace is fitted, the rotation outward of the tibia in these cases necessitating this. The



FIG. 2.

splint is then made fast to the leg by a roller bandage, as shown in Fig. 2, and extension made up to the point that is most agreeable to the patient.

It is believed by some that fixation of a joint suffering from chronic disease is all that is necessary to relieve the pain, relax

the muscular spasm, and effect a cure, with more or less motion the joint having been coaxed, as it were, into a good position. Others hold that to obtain these results it is necessary to add

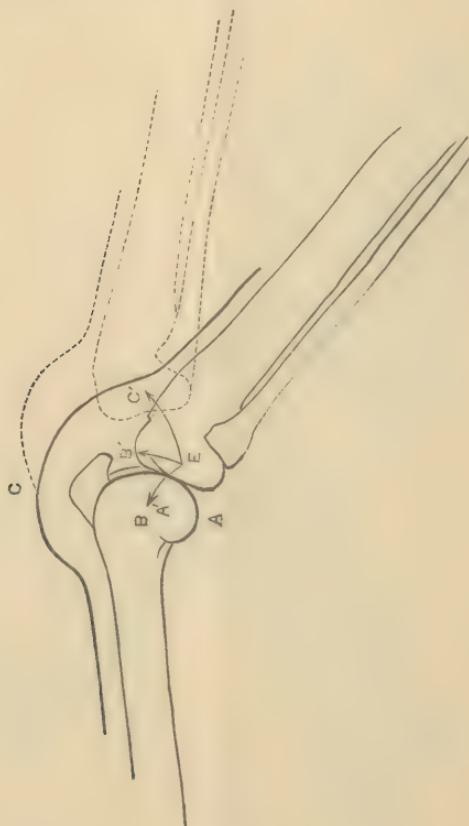


FIG. 3.

traction to fixation. My own belief is that fixation is all that is required in most cases, but that there are a few cases where traction is necessary to relieve pain. To this end I have placed

the centre of motion of the splint anterior to the centre of motion of the joint. (See Fig. 3.)

If the centre of motion (hinge) of the splint be placed posterior to the joint, as at A, and extension be made, any given point in the head of the tibia, as E, following the circumference of the circle of which A is the centre, will approach A' and the joint surfaces will be crowded together. If the splint be constructed with the centre of motion opposite the centre of motion of the joint (hinge at the side of the knee) at B and extension be made, E will approach B', the head of the tibia passing along the surface of the condyles, and there will be more or less pressure according to the degree of muscular spasm. But if the centre of motion of the splint be placed anterior to the joint at the point C a longer radius will be obtained, and if extension be made E will approach C', and the head of the tibia tend to be separated from the condyles according to the degree of extension exerted.

This splint should be used only where there is deformity due to reflex muscular spasm ; and while the joint is very sensitive, the patient should be kept quiet in bed ; later on he may be allowed up, but must use a crutch. I have not yet seen any "short splint" that will protect a joint suffering from chronic joint disease from injurious concussion in walking. The patient weighing anywhere from thirty to one hundred and eighty pounds, and in walking the entire weight being thrown for a longer or shorter time on the affected side, the superficial tissues must be exceedingly tough if they bear a constant traction equal to this weight, whether made by a roller bandage or by strips of adhesive plaster. When the

deformity has been overcome, I discard the short splint and use some form of apparatus that produces fixation, and at the same time acts as a perineal crutch. Fixation of the joint should be insisted upon as long as there is any reflex spasm. Ankylosis should not be feared, for it very rarely occurs—never, indeed, unless there has been excessive destruction of the bone. If it does occur, nothing that the surgeon could have done would have prevented it, for passive motion, by prolonging the inflammation, would tend to cause rather than hinder it.

## CONTINUOUS TRACTION IN THE TREATMENT OF POTTS' DISEASE.<sup>1</sup>

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*The Boston Medical and Surgical Journal*, vol. cxi., No. 1 (July 3, 1884), published an article on "Extension in the Treatment of Diseased Vertebræ," by Buckminster Brown, M.D. The principles advocated accorded with theories held by me for some time, but not put into practice from lack of the right case under the right circumstances. On July 16, 1884, the case presented.

*History:* Female, æt. seven years; good heredity. Four months ago her neck began to grow stiff, and soon head began to droop forward. No complaint of pain, and no crying at night noticed. The condition increased. The general health remained fairly good.

*Examination:* The chin rests on the sternum, and at times is steadied by the hands. Voluntary movement of the head is impossible. Attempted passive movement in any direction elicits an anxious look but no complaint of pain; and the head is found to be held absolutely rigid by muscular spasm. There is a sharp angular kyphos at the third cervical vertebra. No evidence of abscess. The patient was put in bed July

<sup>1</sup> Published in the *Medical Record*, February 7, 1885.

19th, a Sayre's collar was applied, and from it a cord passing over a pulley at the head of the bed, which was elevated, and a ten-pound weight was attached. It was soon found that the patient would slide up in bed till the strap from the collar struck the pulley and released the traction. A harness was then arranged, of webbing around the waist and over the shoulders, and passing to the foot of the bed, where it was fastened. The appetite was good and the sleep normal. From this time the case progressed favorably. The muscular spasm relaxed; the chin left the sternum, and the kyphos diminished. By the end of six weeks voluntary rotation and flexion was possible to a considerable degree when the patient was lying in bed. By November 15th, four months from the beginning of treatment, the deformity was entirely reduced, and motion free in all directions when the head was supported. When support was removed, however, the head drooped forward, and the patient caught the chin in her hands and complained of the motion. A support was then applied, consisting of a modification of the H. G. Davis brace. The upright pieces of steel, instead of stopping opposite the lower borders of the axillæ, were carried up along each side of the spine, carefully moulded to the surface, and up over the posterior surface of the head to the occiput. From here a strap was carried around the forehead, and another downward to form the chin support. The chin support was removed at meal-times, and has recently been removed altogether. Up to the present time there has been no return of the deformity, and the possible voluntary motion has increased.

I have followed one other case, but with less satisfactory

results. During the vacation of Dr. Newton M. Shaffer, I commenced the treatment of a similar case in a like way in his service at St. Luke's Hospital. The hereditary history was not clear, a brother having died of meningitis, and the case was complicated with an abscess. The case improved, however, but the kyphos could still be distinctly felt when Dr. Shaffer returned. He did not approve of the traction treatment, and I put the case in Dr. C. F. Taylor's spinal brace with chin-piece, with Dr. Shaffer's ball-pivot joint. The kyphos has slightly increased in size, but the patient has no pain, and prefers the brace to traction in bed.

Observing these two cases, I have been led to believe that in certain cases traction, as in hip-joint disease, will relieve reflex muscular spasm and pain more quickly, and give a better result as to deformity, than will fixation alone.

NOTES ON TWO CASES OF POTTS' DISEASE, ILLUSTRATING THE DIFFICULTY OF DIAGNOSTICATING BETWEEN UPPER DORSAL AND LOWER CERVICAL CARIES IN VERY YOUNG CHILDREN.<sup>1</sup>

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I desire to present to you notes on two cases of Potts' disease. They are as follows:

Case I.—Male, born of healthy parents, and with hereditary history free from tuberculosis, scrofula, or syphilis, so far as can be ascertained. When six months old he began to throw his head backward and show evidence of pain when the head was moved. This condition increased until, after four and a half months, the head rested on the shoulders and could not be bent forward from that position. Lateral bending in either direction was also equally resisted, and there was but slight rotation. The chin looked forward and upward, and the sterno-mastoid muscles were equally prominent. Any attempted movement of the head caused screams of pain, and the mother was constrained to nurse him on her knees by the cradle. There was no evidence of kyphos at any point. The finger was not passed into

<sup>1</sup> Read before the American Orthopædic Association, June 16, 1887, and published in the *Medical Record*, August 20, 1887.

the throat. He started and cried in his sleep, and had grown thin.

Case II.—Male, has good hereditary history so far as can be learned, with the exception that one grandmother had “consumption.” The child was healthy up to the ninth month. After that he had a cough and was sickly; when twenty-eight months old he began to throw his head backward and show stiffness in the neck. There was little or no complaint of pain, but there was restlessness in sleep. He was a fat but flabby child. At the end of eight months he walked with head thrown well back, almost resting on the shoulders; chin looking forward and upward; sterno-mastoid muscles equally prominent, and no facial evidence of pain. The head can be bent backward to the normal; bent to either side somewhat, but cannot be bent forward; on attempting the latter he cries with pain. There is slight possible rotation. He eats and sleeps well, and shows no evidence of pain when left to himself. There is no evidence of kyphos anywhere.

Now, to what condition did these symptoms point? That there was spinal caries there could be no doubt. The position of the head, thrown far back, its weight supported by the elevated shoulders; the muscular rigidity limiting forward bending, but permitting backward, and, to some degree, lateral bending and rotation, and the equally contracted sterno-mastoid muscles pointing the chin directly forward, taken in connection with the absence of pain about the chest and epigastrium; the absence of paraplegia, and of kyphos after, in the first case four, and in the second eight, months' treatment, led me to locate the caries in the lower cervical vertebræ.

The progress, however, showed the error of my conclusions, and this is my excuse for presenting these cases. The treatment in both was the same. They were put in bed, on their backs, and traction was made by means of a sling about the head and pulley and one-pound weight. In the first case, the ten-months-old baby, at the end of three days the pain was greatly relieved ; he slept quietly, and the position and motions were greatly improved. After five months the head was in normal position, and could be freely moved when resting on the pillow, but the patient could not sit up and could not move his legs. The tendon reflexes in the lower extremities were increased, and there was found to be a sharp, angular kyphos, involving the first, second, and third dorsal vertebræ. In the second case, after three months the head was in normal position and could be moved freely when resting on the pillow. The patient could sit up and hold the head in normal position for a short time, and there was no evidence of pain except when the head was bent forward with some force. Four months later, the case having progressed favorably as to neck symptoms, the tendon reflexes of the lower extremities became exaggerated, and an examination of the dorsal spine revealed a kyphos involving second, third, and fourth dorsal vertebræ.

The lesson taught me by these cases is this : That in *very young* children caries of the upper three or four dorsal vertebræ may give symptoms referable only to the neck, and should lead us to exercise great caution in diagnosis when the symptoms point to disease in the lower cervical region.







